

Additional file 2: Overview – Review of literature regarding factors associated with medication related non-adherence (2011-2013)

Author(s)	Year	Sample	Design	Patient related factors						Medication related factors	Influence on NA	Health care system related factors	Influence on NA	
				Socio-demographic	Influence on NA	Unintentional	Influence on NA	Intentional	Influence on NA					
Agh T et al.	2011	170 patients with COPD	Cross-sectional survey	Age	n. s.					Complex (dosing) regime	Increase			
Baltazary G et al.	2011	197 patients with HIV/AIDS and 30 physicians	"Face-to-face"-Interviews	Stigmatization	Increase	Forgetfulness	Increase	Lack of awareness of the disease	Increase	Side effects	Increase	Higher copayments / costs	Increase	
Ben-Natan M et al.	2011	207 older patients with long-term medication	Cross-sectional survey									Satisfaction with treating physician	Decrease	
Bird GC et al.	2011	Physicians	Cross-sectional survey	Older age	Increase			Lack of disease knowledge	Increase			Higher costs	Increase	
Borgsteede SD et al.	2011	20 patients with DM2	Semi-structured interviews	Lack of social support	Increase			Lack of awareness of the need of therapy	Increase	Complex (dosing) regime	Increase			
Chamroonsawasdi K et al.	2011	230 patients with HIV/AIDS	Cross-sectional survey	Familiarly support	Decrease			Lack of disease knowledge	Increase	Side effects	Increase			
								Lack of awareness of disease severity	Increase					
Daley DJ et al.	2011	772 patients with Parkinson	Review	Older age	Decrease	Affective disorder	Increase	Lack of awareness of the disease	Increase	Complex regime / poly-pharmacy	Increase			
				Longer duration of disease	Increase			Lack of disease knowledge	Increase					
				Lack of social environment	Increase									
Gellad WF et al.	2011	Older patients with long-term medication	Review			Cognitive impairment	Increase	Lack of disease knowledge	Increase	Side effects poly-pharmacy	Increase	Good Physician-patient-relationship	Decrease	
Iversen MD et al.	2011	32 patients with osteoporosis, 11 GPs, 1 nurses	Focus group interviews			Difficulties to remember taking instructions	Increase	Lack of disease knowledge	Increase	Side effects	Increase	dissatisfaction with the doctor /consultation	Increase	
James BO et al.	2011	137 patients with mental illness	Cross-sectional study with written questionnaires	Stigmatization	Increase					Complex (dosing) regime	Increase			
Kim JH et al.	2011	204 Warfarin patients	Cross-sectional survey					Lack of disease knowledge	Increase					
								Lower self-efficacy	Increase					
Krousel-Wood M et al.	2011	1.965 patients with hypertension	Cohort Study of Medication Adherence Among Older Adults	Female gender	Decrease	Depression	Increase							
				Being married	Decrease	Stressful life	Increase							
Kyser M et al.	2011	528 patients with HIV/AIDS	Multicenter, prospective cohort study	Ethnicity (nonwhite)	Increase	Regular alcohol consumption	Increase							
				Unemployment	Increase									
				Duration of disease	Increase									
Mauskop A et al.	2011	Statin-therapy	Review	Comorbidities	Increase					Side effects	Increase	Good guideline adherence of treating physician	Decrease	
												Higher costs	Increase	
Muntner P et al.	2011	284 patients after PCI (Clopidogrel)	Cross-sectional study with written questionnaires			Difficulty to consult physician	Increase	Not be able to / dare to ask his doctor about instructions	Increase			Higher costs	Increase	
Nair KV et al.	2011	2.451 patients with hypertonia (non-adherence)	Phone interviews			Forgetfulness	Increase					Long distance to the treating center	Increase	
						Difficulties to come to pharmacy	Increase							
Salt E et al.	2011	108 patients with rheumatoid arthritis	Cross-sectional survey	Ethnicity (nonwhite)	Increase					Number of taken drugs	Increase			
Sedjo RL et al.	2011	13.593 patients with breast cancer	Investigation based on administrative data	Older age	Decrease							Higher copayments	Increase	
				Number of comorbidities (CCI)	Increase									
Valdeoriola F et al.	2011	418 Patients with Parkinson	Cross-sectional survey	Being married	Decrease	Psychiatric symptoms	Increase	Lack of disease knowledge	Increase					
				Lower income	Increase									
Wakibi SN et al.	2011	403 patients with HIV/AIDS	"Face-to-face"-Interviews			Forgetfulness	Increase			Complex (dosing) regime	Increase	Long distance to the treating center	Increase	

Legend: The table summarized the results of the conducted review analyzing the existing literature with regards to predictors of medication-related non-adherence (2011-2013). The conducted review is based on a systematic database search (MEDLINE) referring to the related topic in German and English literature of the period from January 2008 to March 2013. The following search terms were used: Adherence [AND] factors (281 hits), Adherence [AND] factor (30 hits), Adherence [AND] predictors (148 hits), Adherence [AND] predictor (11 hits), Adherence [AND] causes (8 hits), Adherence [AND] cause (11 hits), Adherence [AND] barriers (107 hits), Adherence [AND] barrier (7 hits). After removal of duplicates using the database ID (PMID) 597 articles were included in the first qualifying examination. Within this first examination, studies analyzing the adherence of children, dealing with the adherence of physicians in terms of recommended guidelines or relating to the non-adherence to therapy in terms of diet plans, exercise / sports programs, smoking cessation programs or other non-medication therapies were excluded. Finally, 105 articles were included in the review.

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Wasti SP et al.	2011	Patients with HIV/AIDS	Review	Stigmatization	Increase	Forgetfulness	Increase	Lack of self-efficacy	Increase	Side effects	Increase		
				Financial problems	Increase								
				Lack of social support	Increase								
Bailey GR et al.	2012	59 patients with DM	Cross-sectional study with written questionnaires	General poor health	Increase						Higher costs	Increase	
				Low severity of the disease	Increase								
Barraco A et al.	2012	650 patients with bipolar disorder	Multicenter, prospective cohort study	Younger age	Increase	Regular alcohol consumption	Increase	Negative attitudes to therapy	Increase				
Chisholm-Burns M et al.	2012	512 patients after kidney transplantation (immunosuppressive)	Cross-sectional survey	Older age (18-29 versus 46-64)	Decrease	Forgetfulness	Increase	Belief in the need of therapy	Decrease				
								General dissatisfaction with life	Increase				
Cui Z et al.	2012	4.660 patients with fibromyalgia	Investigation based on administrative data	Older age	Decrease	Depression	Increase						
			Comorbidities	Increase									
Dessie A et al.	2012	384 patients with hypertension	Cross-sectional survey	Number of comorbidities	Increase			Lack of disease knowledge	Increase		Long distance to the treating center	Increase	
Devold HM et al.	2012	7.610 patients with osteoporosis	Investigation based on administrative data	Older age (40-59 vs. 70-79); only in women	Decrease								
				Higher income; only in women	Decrease								
				Higher level of education, only in men	Decrease								
Efficace F et al.	2012	413 patients with leukemia	Cross-sectional survey	Lack of social support	Increase			Lack of disease knowledge	Increase	Burden of concomitant medication	Increase		
Fedrick F et al.	2012	272 patients with DM	Cross-sectional survey			Regular alcohol consumption	Increase			Side effects	Increase	Long distance to the treating center	Increase
Grigoryan L et al.	2012	176 patients with hypertension	Secondary analysis of an RCT	Female gender	Increase						Public health care provider	Increase	
				African-American	Increase								
Huetsch JC et al.	2012	2.730 patients with COPD	Investigation based on administrative data					Previous adherence to other medication class	Decrease				
Karakurt P et al.	2012	750 patients with hypertension	Cross-sectional study with written questionnaires	Lack of social environment	Increase	Forgetfulness	Increase	Lack of disease knowledge	Increase		Higher copayments / costs	Increase	
					Carelessness	Increase							
Khdour MR et al.	2012	173 patients with COPD	"Face-to-Face"-Interviews and patient chart review	Number of comorbidities	Increase	Depression	Increase	Lack of belief in the efficacy of the drugs	Increase				
								Lower self-efficacy	Increase				
Lamba S et al.	2012	281 patients after kidney transplantation (immunosuppressive)	Cross-sectional study with written questionnaires via Email	Be divorced	Increase	Previous alcoholism	Increase						
						Mental problems	Increase						
Lewis LM	2012	Afro-Americans with hypertension	Review			Depression	Increase	Lower self-efficacy	Increase		Good doctor-patient communication	Decrease	
Lewis LM et al.	2012	253 patients with hypertension	Secondary analysis of an RCT	Age	n. s.	Depression	Increase	Lower self-efficacy	Increase				
Li WW et al.	2012	200 patients with hypertension	Cross-sectional survey	Longer duration of disease	Increase			Lower perception of susceptibility to diseases	Increase				
Magura S et al.	2012	131 patients with mental illness (bipolar disorder, depression, schizophrenia)	"Face-to-face"-Interviews	Lack of social support	Increase			Dissatisfaction with medication / therapy	Increase	Side effects	Increase		
								Lower self-efficacy	Increase				
Morales JM et al.	2012	1.983 patients after kidney transplantation (immunosuppressive)	Cross-sectional survey					Perception that one's life is disturbed by the treatment	Increase	Complex (dosing) regime	Increase		
Murata A et al.	2012	151 patients with depression	Cross-sectional survey	Type of depression	-					Side effects	Increase		
O'Neil CR et al.	2012	556 patients with HIV/AIDS	Longitudinal cohort study	Higher age	Decrease	Drug addiction	Increase						
				Female gender	Increase								
				Low income	Increase								

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Peyrot M et al.	2012	1.530 patients with DM and 1.250 physicians	Internet-based cross-sectional survey of physician and phone interviews with patients			Stress/emotional problems		Increase		Too busy with other things	Increase		
										Skipping meals	Increase		
										Traveling	Increase		
										Embarrassment in the public (injection)	Increase		
Portelli MS et al.	2012	43 patients with HIV/AIDS	Focus group interviews	Stigmatization	Increase					Long distance to the treating center	Increase		
Rushworth GF et al.	2012	20 patients after PCI	"Face-to-face"-Interviews							Awareness about the consequences of not taking the medication	Decrease	Good Physician-patient-relationship	
										Awareness of the treatment benefit	Decrease		
										Fear of side effects	Increase		
Saks EK et al.	2012	160 patients with urinary incontinence	Cross-sectional survey					General belief that drugs are too often used		Increase			
Schoenthaler AM et al.	2012	608 patients with DM and 41 physician	Cross-sectional survey	Longer duration of disease	Increase			Belief in the need of therapy	Decrease	Subcutaneous application (vs. oral)	Increase	Satisfaction with the ability of the physician to explain something	Decrease
Thames AD et al.	2012	181 patients with HIV/AIDS	Follow-up-study	Lack of social support	Increase	Depression	Increase					Satisfaction with the physician	Decrease
Tobi P et al.	2012	701 chronically ill patients	Investigation based on administrative data	Older age	Decrease								
Wasti SP et al.	2012	330 Patients with HIV/AIDS and 34 other "Stakeholder"	Cross-sectional survey and in-depth interviews	Female gender	Increase	Regular alcohol consumption	Increase	Lack of disease knowledge	Increase	Side effects	Increase	Long distance to the treating center	Increase
				Analphabeticisms	Increase			Negative attitudes to therapy	Increase				
Wiegand P et al.	2012	88.635 patients with first prescription of Statin	Investigation based on administrative data	Older age (> 75 vs. 45 - 55)	Decrease							Visiting of only one physician	Decrease
				Female gender	Increase							Visiting of only one physician	Decrease
Alison Phillips L et al.	2013	71 patients with hypertonia	Prospective cohort study					"Bad" habits have been influenced by prior therapy experience	Increase				
Bressington D et al.	2013	584 patients with schizophrenia	Cross-sectional survey					Positive attitudes to therapy	Decrease	Side effects	Increase		
								Awareness of the need of therapy	Decrease				
Curkendall SM et al.	2013	Patients with DM2	Investigation based on administrative data	Female gender	Increase					poly-pharmacy	Unclear / variable	Mail-order use	Decrease
				Older age	Decrease							Lower level of cost sharing	Decrease
				Number of comorbidities	Unclear								
Evon DM et al.	2013	242 patients with HCV	Prospective cohort study	Older age	Decrease	Depression	Increase			Side effects	Increase	Private insurance	Decrease
				Unemployment	Unclear / variable								
				African-American	Increase								
				Unmarried	Increase								
				Low level of education	Increase								
Giroto E et al.	2013	385 patients with hypertonia	Cross-sectional study	Older age (50 - 79)	Decrease	Regular alcohol consumption	Increase					At least one physician consultation per year	Decrease
				Previous heart attack	Decrease								
Gonzalez A et al.	2013	121 patients with HIV/AIDS	Cross-sectional study with written questionnaires			Drug addiction	Increase						
Hanif H et al.	2013	632 patients with HIV/AIDS	Cross-sectional study with written questionnaires	Female gender	Increase								
				Great social support	Decrease								
				Higher Asset Index	Decrease								

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Jónsdóttir H et al.	2013	255 patients with bipolar disorder	Cross-sectional survey	Higher IQ	Increase	Drug addiction / Alcoholism	Increase	Lack of insight	Increase	Side effects	Increase		
Lang K et al.	2013	28.238 patients with schizophrenia	Investigation based on administrative data			Regular alcohol consumption	Increase	Awareness about the transmission of the disease	Decrease	Previous NA (within "Baseline"-period)	Increase		
Méda ZC et al.	2013	1.043 patients with HIV/AIDS or/and TB	Cross-sectional study with written questionnaires	Higher number of persons in household	Increase			Positive attitudes	Decrease		Poor access to health care for financial reasons	Increase	
Naar-King S et al.	2013	158 patients with HIV/AIDS	Prospective cohort study	Stigmatization (HIV)	Increase			Awareness of the status of disease			Poor doctor-patient relationship	Increase	
Pachi A et al.	2013	Patients with HIV/AIDS	Review	Lack of social support	Increase	Depression	Increase						
Park YH et al.	2013	241 patients with hypertonia	"Face-to-face"-Interviews	African-American	Increase								
Tang L et al.	2013	759 patients with coronary artery disease	Investigation based on administrative data	Female gender	Increase								
				Hispanic/Black	Increase								